LISTING OF THE CLAIMS

This listing of claims, amended as indicated below, will replace all prior versions, and listings, of claims in the application

1-4. (Canceled)

5. (Currently Amended) An integrated circuit for an electronic ballast control, comprising:

half-bridge control circuitry for driving a power half-bridge in the electronic ballast;

ballast control circuitry coupled to the half-bridge control circuitry and operable to provide signals to the half-bridge control circuitry to control operation of the half-bridge control circuitry;

an input coupled to the ballast controlled circuitry and indicative of at least one of a state of power supplied to the electronic ballast and a state of an electronic ballast load,

the ballast control circuitry controlling the half-bridge control circuitry based on the input; and

power factor control circuitry coupled to the ballast control circuitry and operable to regulate ballast power to obtain an improved power factor correction for the ballast,

~~The integrated circuit according to claim 1,~~ wherein the power factor control circuitry [[has]] is selectively operable at a high gain to obtain a fast response [[and]] or at a low gain for power factor correction optimization.

6 (Currently Amended) An integrated circuit for an electronic ballast control, comprising:

half-bridge control circuitry for driving a power half-bridge in the electronic ballast;

ballast control circuitry coupled to the half-bridge control circuitry and operable to provide signals to the half-bridge control circuitry to control operation of the half-bridge control circuitry;

an input coupled to the ballast controlled circuitry and indicative of at least one of a state of power supplied to the electronic ballast and a state of an electronic ballast load;

the ballast control circuitry controlling the half-bridge control circuitry based on the input; and

power factor control circuitry coupled to the ballast control circuitry and operable to regulate ballast power to obtain an improved power factor correction for the ballast.

~~The integrated circuit according to claim 1, further comprising a switch in~~ wherein the power factor control circuitry includes a switch, an on time of the switch being increased when a voltage of the input power approaches zero.

7. (Currently Amended) The integrated circuit according to claim [[1]] 5, wherein:

the half-bridge control circuitry includes an output for a high and a low half-bridge switch; and

the low side output is referenced to a voltage common to the integrated circuit.

8. (Original) A method for controlling an electronic ballast, comprising:

sensing a zero crossing of an input voltage;

increasing a switch on time as the input voltage approaches the zero crossing to provide for power factor correction with reduced crossover distortion;

increasing a gain of a power factor correction loop to obtain a fast response;

reducing a gain of a power factor correction loop to optimize ballast power factor; and

controlling an inductor by activating a switch in a boost type power factor correction circuit.

9. (Original) The method according to claim 8, further comprising disabling the power factor correction circuitry when a fault is detected in the electronic ballast.

10. (Canceled)

11. (Currently Amended) A power factor correction circuit integrated into an electronic ballast, the power factor correction circuit comprising:

an input voltage sensing section for sensing input voltage to the electronic ballast;

an inductor current sensing section for detecting a zero current crossing of an inductor;

a variable gain control section coupled to the input voltage sensing section and operable to provide variable ~~close~~ closed loop feedback gain in the power factor correction circuit;

a compensation indication coupled to the variable gain control section for influencing a closed loop gain of the variable gain control section;

an output section coupled to the variable gain control section and the inductor sensing section for driving a power factor correction switch, an on time of the output section being related to the input voltage, the variable closed loop gain and the zero current crossing.

12. (Currently Amended) The circuit according to claim [[10]] 11, further comprising a fault signal input for disabling the output section when a fault is detected.

13. (Currently Amended) The circuit according to claim 11, wherein the circuit output is coupled to a switch that is coupled to the inductor and controls charging and discharging of the inductor.

14. (Canceled)

15. (New) An integrated circuit for an electronic ballast control, comprising:

half-bridge control circuitry for driving a power half-bridge in the electronic ballast;

ballast control circuitry coupled to the half-bridge control circuitry and operable to provide signals to the half-bridge control circuitry to control operation of the half-bridge control circuitry;

an input coupled to the ballast controlled circuitry and indicative of at least one of a state of power supplied to the electronic ballast and a state of an electronic ballast load;

the ballast control circuitry controlling the half-bridge control circuitry based on the input; and

power factor control circuitry coupled to the ballast control circuitry and operable to regulate ballast power to obtain an improved power factor correction for the ballast,

wherein the power factor control circuit includes a boost type power converter operated in critical conduction mode.

16. (New) The integrated circuit according to claim 15, wherein the power factor control circuitry includes a switch, an on time of the switch being increased when a voltage of the input power approaches zero.

17. (New) The integrated circuit according to claim 5, wherein the power factor control circuitry includes a switch, an on time of the switch being increased when a voltage of the input power approaches zero.

18. (New) The integrated circuit according to claim 15, wherein the power factor control circuitry is selectively operable at a high gain to obtain a fast response or at a low gain for power factor correction optimization.

19. (New) The integrated circuit according to claim 6, wherein the power factor control circuitry is selectively operable at a high gain to obtain a fast response or at a low gain for power factor correction optimization.

20. (New) The integrated circuit according to claim 5, wherein the power factor control circuit includes a boost type power converter operated in critical conduction mode.

21. (New) The integrated circuit according to claim 6, wherein the power factor control circuit includes a boost type power converter operated in critical conduction mode.

22. (New) The integrated circuit according to claim 11, wherein the power factor control circuit includes a boost type power converter operated in critical conduction mode.